



M/035/0002

Leslie Heppler <lheppler@utah.gov>

Quarterly Progress Report for East Waste Rock and South Dumps GWDP

1 message

Vinton, Brian (RTKC) <Brian.Vinton@riotinto.com>

Thu, Aug 11, 2016 at 10:52 AM

To: "Douglas Bacon (dbacon@utah.gov)" <dbacon@utah.gov>, "lheppler@utah.gov" <lheppler@utah.gov>

Cc: "Heaton, Trevor (RTKC)" <Trevor.Heaton@riotinto.com>

Doug and Leslie,


I had been sending this quarterly updates, which are part of requirements for KUC's GWDP to you, Doug and Zeb Kenyon said they are supposed to also be sent to you Leslie so 2Q is attached.

The GWDP that includes the waste rock areas has quarterly reporting and next report due to Brian Hamos is August 15 so you are receiving a day or so ahead of what Brian H will receive.

Thanks

Brian

2 attachments

 **2Q2016_EWRE_UGW350010_Appen H Quarterly.pdf**
149K

 **2Q2016_SD_UGW350010_Appendix H Quarterly Report.pdf**
28K

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**EAST WASTE ROCK EXTENSION
SUMMARY OF QUARTERLY ACTIVITIES FOR THE PERIOD OF
April 1, 2016 – June 30, 2016 (2Q2016)**

SECTION 1.0: SUMMARY OF QUARTERLY ACTIVITIES

The East Waste rock Extension (EWRE) project made good progress over the quarter with minimal delay due to rain events. The Utah Division of Water Quality (UDWQ) performed three inspections during the period.

Construction activity on all remaining cut-off walls was initiated with the virtual completion of Lost Creek, Keystone, Crapo and South Crapo. Minor items such as grating, hand rails and signage remain.

Bulk earthwork continued to proceed south to north in an orderly fashion with efforts focused in the Keystone, North Keystone, Crapo and Congor drainages. The entirety of the C4 temporary stockpile located just east of the Keystone cut-off wall was successfully moved to the Stockpile D. At this time the scraper fleet was retired from the project and all remaining bulk earthwork removal will be completed using haul trucks to stockpile C.

Toe drain activity was completed east of the mine access road from North Keystone drainage to Crapo drainage and achieved partial completion on the west side of the mine access road between Keystone/North Keystone ridge and Lost Creek while activities in the bottom of the Keystone and Lost Creek were completed for the direction drilling. Directional drilling was completed in the Keystone drainage and contact water routed through the toe drain right at the finish of the quarter.

Branch lines to the wet and dry sides of the remaining cut-off walls continued with the completion of weir boxes associated with the completion of the newly constructed cut-off walls.

SECTION 2.0: QUARTERLY FORECAST OF ACTIVITIES.

The following activities are forecasted for 3Q2016:

Area	Projected Status
Bulk Earthwork	
D3B	Complete
D4B	Complete
D5B	Complete
D6B	Complete
Stockpile D	Re-contoured
Lost Creek	Complete basin excavation and construction
Keystone	Complete basin construction
North Keystone	Complete basin construction
South Crapo	Complete basin construction
Crapo	Complete toe drain installation; Complete basin construction
South Congor	Complete toe drain installation; Complete basin construction
Midas	Complete toe drain installation; Start basin construction

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Pipe and Structure	
Lost Creek	Complete directional bore and build associated structures
North Keystone	Complete COW and associated piping
South Crapo	Install toe drain branch line
Crapo	Install toe drain branch line
South Congor	Complete COW and associated piping
Midas	Complete COW and associated piping
Demolition	
North Keystone	Breach
South Congor 1&2	Breach
Congor 1 and 2	Breach

SECTION 3.0: ENGINEERING

Bulk earthwork was completed in the Congor and Midas drainages which provided opportunity to fully explore bedrock and in turn finalize the cut-off wall and basin design based upon final bedrock topography.

The v-notch weir and baffle assembly re-design was completed, eliminating the need to penetrate the liner with anchor bolts. Installation was completed on several weir boxes before the end of the quarter.

Modified the toe drain alignment in the D6B area above the new Congor cut-off wall and existing Midas cut-off walls to avoid legacy water collection structures west of Midas and minimize constructability concerns associated with the placement of waste rock. This decision was discussed with UDWQ representatives by phone on July 6th and changes will be captured in the as-built drawings as part of the field fit changes associated with the project at large.

SECTION 4.0: CONSTRUCTION ACTIVITIES

Tables 1 through 3 included in Section 4.1 provide a detailed status for bulk earthwork, cut-off walls, and the toe drain, respectively.

SECTION 4.1: AREA SPECIFIC DETAILS

Activities by area through June 30, 2016;

Table 1 - Bulk Earthworks Progress and Quantity Forecast by Area

AREA OR BASINS	ESTIMATED QUANTITIES W/ VARIANCE	CUBIC YARDS REMOVED AS OF 06-30-16	% COMPLETED AS OF 06-30-16	COMMENT
A2	552,258	552,258	100%	COMPLETE
A4	1,072,658	1,072,658	100%	COMPLETE
B1	59,849	59,849	100%	COMPLETE
B2	59,391	59,391	100%	COMPLETE
B3	148,890	148,890	100%	COMPLETE
C1	724,932	724,932	100%	COMPLETE

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C2	1,641,990	1,596,465	97%	COMPLETE
C3	860,462	844,462	98%	COMPLETE
C4	373,831	418,169	112%	COMPLETE
C4 TEMP	560,000	560,000	100%	COMPLETE
D2A	0	0	N/A	REMOVED FROM SCOPE
D2B	850,000	1,060,339	125%	COMPLETE
D3A	0	0	N/A	REMOVED FROM SCOPE
D3B	847,272	783,164	92%	
D4A	0	0	N/A	REMOVED FROM SCOPE
D4B	481,204	141,778	29%	
D5A	0	0	N/A	REMOVED FROM SCOPE
D5B	501,558	0	N/A	
D6A	0	0	N/A	REMOVED FROM SCOPE
D6B	404,953	0	0%	
COPPER 1	175,778	175,778	100%	COMPLETE
COPPER 2	151,712	151,712	100%	COMPLETE
COPPER 3	104,022	104,022	100%	COMPLETE
COPPER 4	223,000	223,000	100%	COMPLETE
LOST CREEK / KEYSTONE	160,000	55,100	34%	
NORTH KEYSTONE	700,000	446,132	64%	
SOUTH CRAPO / CRAPO	220,000	101,228	46%	
SOUTH CONGOR	330,537	99,000	30%	
MIDAS	304,045	0	0%	

Table 2 - Cut-off Wall Progress

Drainages	Overall % Complete
Copper 4	99%
Copper 3	100%
Copper 2	100%
Copper 1	100%
Lost Creek	95%
Keystone	95%
North Keystone	7%
South Crapo	91%
Crapo	91%
South Congor	49%
Midas	17%
Mainline	90%

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Table 3 - Toe Drain Progress

Drainage	Forecast LF	% Toe Drain	Trench	Pipe	Drain Rock	Geotextile	Clay	NARD Berm	Native
Copper 4	1,670	100.0%	1,670	1,670	1,670	1,670	1,670	1,670	1,670
Copper 3	350	100.0%	350	350	350	350	350	350	350
Copper 2	600	100.0%	600	600	600	600	600	600	600
Copper 1	1,800	100.0%	1,800	1,800	1,800	1,800	1,800	1,800	1,800
Lost Creek	650	27.7%	180	180	180	180	180	180	180
Keystone	800	87.5%	700	700	700	700	700	700	700
North Keystone	1,700	94.1%	1,600	1,600	1,600	1,600	1,600	1,600	1,600
South Crapo	500	80.0%	400	400	400	400	400	400	400
Crapo	1,200	0.0%							
South Congor	900	0.0%							
Midas	1,200	0.0%							

SECTION 4.2: QUALITY ASSURANCE/QUALITY CONTROL

Quality assurance continues to focus in the following areas:

- Continue to audit QC activity for project
- Third party review of all HDPE liner welding on structures
- Tracking toe drain install by station to verify design
- Daily field reports generated on field observation

SECTION 5.0: DEMOLITION ACTIVITIES

The legacy collection system piping was rerouted in the Crapo and Congor drainages in order accommodate bulk earth activities.

The remaining pieces of the legacy contact and storm water mainline were removed to the Midas drainage.

The Crapo, Keystone and Lost Creek cut-off walls were breached as well as associated distribution boxes and flumes.

SECTION 6.0: INSPECTIONS

Three site inspections were conducted during the quarter on May 4th, May 25th and June 30th. The inspections focused on various stages of completion of all the cut-off walls (Copper 4 through Midas). Inspections also observed work taking place on the Copper drainage storm water detention basins, directional drilling under the mine access road and toe drain construction in the Keystone drainage, and weir box completion in Copper 3 with the installation of the baffles and v-notch weir assembly.

The Board of Oil, Gas and Mining (BOGM) visited the EWRE project in conjunction with a field trip of the mine on May 26th. The tour group consisted of board members and staff which visited the DGB overlook of bulk earthwork activities and Copper 3 drainage for and overview of the new cut off wall, detention basin and toe drain.

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Along with representative from RTKC, members of the United States Environmental Protection Agency (US EPA) Region 8, Utah Division of Environmental Response and Remediation (UDERR), and UDWQ visited the EWRE project on June 28th in conjunction with other activities being conducted at Rio Tinto Kennecott Copper. The group visited the same stops as the BOGM field tour described above.

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**SOUTH WASTE ROCK RECLAMATION
SUMMARY OF QUARTERLY ACTIVITIES FOR THE PERIOD OF
April 1, 2016 – June 30, 2016 (2Q2016)**

SECTION 1.0 SUMMARY OF QUARTERLY ACTIVITIES

Project funding was approved late in 2015 and field activities commenced in Yosemite Drainage in first and second quarters of 2016. Beginning in the second quarter after the existing Yosemite cutoff wall was demolished, the Mine placed waste rock in the lower reaches of Yosemite drainage. During the second quarter, the storm water basins (2) in Yosemite drainage were constructed and excavation began for the second (lower wall). Piping was connected from the basins to the Eastside Collection System.

Soil stripping was completed in 2Q2016 in Castro drainage. Approximately 140,000 cubic yards of reclamation soil was stripped and stockpiled adjacent to Castro drainage. This soil will be used in the future as a cover for the reclaimed waste rock. In addition to the soil stripping in Castro drainage, anchor trenches were installed to aid in geotechnical stability prior to new waste rock placement for the Castro area. The trench work was done on the north fork of Castro Drainage where previous waste rock had eroded into the drainage.

SECTION 2.0: QUARTERLY FORECAST OF ACTIVITIES

Forecasted activities for 3Q 2016:

- Construct lower cutoff wall in Yosemite. Excavation was completed late 2Q 2016 and wall will be completed in July 2016.
- Perform finishing touches on detention basins (6.1, 6.2 and 6.3 between the Upper and Lower Yosemite walls. Finish work will included final shaping of the site grade and soil backfill adjacent to the lower cutoff wall.
- Finish site grade in Castro drainage and demobilized equipment and turn area over to Mine for waste rock placement.

SECTION 3.0 ENGINEERING

Place and tie in storm water pipes into the Eastside Collection.

Design and field fit the lower cutoff wall to bedrock exposure.

SECTION 4.0: CONSTRUCTION ACTIVITIES

- Excavation of lower Yosemite cutoff wall
- Soil stripping an anchor trench installation in Castro drainage.

SECTION 4.1 AREA SPECIFIC DETAILS

No items

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SECTION 4.2 QUALITY ASSURANCE/QUALITY CONTROL

AMEC personnel on site to monitor quality control and compliance with specifications on a daily basis. Daily reports and testing results will be complied at the completion of this season's work and submitted to UDWQ. Final as-built drawings and pictures are being prepared for submittal to DWQ.

SECTION 5.0 DEMOLITION ACTIVITIES

The existing Yosemite Cutoff Wall was demolished during the quarter.

SECTION 6.0 INSPECTIONS

Two visits were made by DWQ during 2Q2016. Hamos and Campbell visited the as-built upper Yosemite cutoff wall and the second visit was see the lower Yosemite wall excavation area. No deficiencies were identified.

In addition, the Board of Oil, Gas and Mining (BOGM) visited the general project area in conjunction with a field trip of the mine on May 26th.

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